

Claims

1. A force limiter provided on a belt retractor, said belt retractor comprising a belt spool (1) that is rotatably mounted in a frame (10) and has at least one flange (1a) and a disk (2) that can be non-rotatably blocked on said frame, characterized in that said disk (2) and said flange (1a) of said belt spool (1) are adapted to be coupled by a cutting element (3) which, with a relative rotation between said disk (2) and said flange (1a), comes into a coupling position and cuts material when said relative rotation is continued.
2. The force limiter according to Claim 1, characterized in that said disk (2) is coupled to said belt spool (1) by a torsion bar (4).
3. The force limiter according to Claim 1, characterized in that said cutting element (3) is accommodated in a recess (12) of said disk (2) and supported in axial direction as well as in circumferential direction, and in that it has a blade that in said coupling position engages on an end face of said flange (1a) opposite to said blade.
4. The force limiter according to Claim 3, characterized in that said flange (1a) has a control pin (5) that transfers said cutting element (3) by means of an inclined plane axially into said coupling position, when said relative rotation between said disk (2) and said flange (1a) occurs.
5. The force limiter according to Claim 4, characterized in that said control pin (5) is sheared off when said relative rotation continues.
6. The force limiter according to Claim 1, characterized in that a coaxial ring groove (6, 13) is provided on an end face of said flange (1a), said ring groove having an axial depth and a radial width that are determined by an envisaged force limiting level.

7. The force limiter according to Claim 6, characterized in that said ring groove (6, 13) has a starting section (6a, 13a) into which said blade of said cutting element (3) projects in said coupling position.

5 8. The force limiter according to Claim 6, characterized in that a radial cutting width of said blade of said cutting element (3) decreases as a relative angle of rotation increases.

9. The force limiter according to Claim 6, characterized in that a radial cutting width of said blade of said cutting element (3) increases as a relative angle of rotation increases.

10 10. The force limiter according to Claim 6, characterized in that a radial cutting width of said blade of said cutting element (3) remains constant as a relative angle of rotation increases.

11. The force limiter according to Claim 6, characterized in that an axial cutting depth of said blade of said cutting element (3) decreases as a relative angle
15 of rotation increases.

12. The force limiter according to Claim 6, characterized in that an axial cutting depth of said blade of said cutting element (3) increases as a relative angle of rotation increases.

13. The force limiter according to Claim 6, characterized in that an axial
20 cutting depth of said blade of said cutting element (3) remains constant as a relative angle of rotation increases.

14. The force limiter according to Claim 6, characterized in that said belt spool has a stop (7) which, after a cutting procedure on said material that can be caught by said cutting element (3) during said relative rotation, is moved via a pressure
25 spring (8) in an axial direction into a position of engagement with said cutting element (3).

15. The force limiter according to Claim 14, characterized in that said stop (7) has a strength that is sufficiently high to prevent it from being cut by said cutting element (3) during engagement with the latter.